Learning

Learning is “Any relatively permanent change in behaviour or behavioural potential change produced by experience”

In other words

“Learning is the relatively permanent change in a person’s knowledge or behaviour due to experience. This definition has three components: 1) the duration of the change is long-term rather than short-term; 2) the locus of the change is the content and structure of knowledge in memory or the behaviour of the learner; 3) the cause of the change is the learner’s experience in the environment rather than fatigue, motivation, drugs, physical condition or physiologic intervention.”

–From Learning in Encyclopaedia of Educational Research, Richard E. Mayer

Learning and Habituation

Habituation is one of the simplest and most common form of learning and it occurs when repeated exposure to a stimulus decreases an organism's responsiveness to the stimulus.”

Habituation involves a stimulus with no association, while conditioning involves a stimulus with an association.

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IT

For example - imagine that you are studying with the television playing in the background. The TV might be distracting at first, but habituation allows you to eventually tune out the noise and focus on what you are trying to learn.

Learning and Maturation

Relationship between Learning and Maturation

Learning and maturation are intertwined processes. In fact, it is maturity that facilitates learning. When you are teaching something to a person, it is always important to make sure that person has achieved the necessary mental maturity required for that lesson.

Difference Between Learning and Maturation

Learning is the process of acquiring knowledge, skills, and behaviours through experience, training and education. In contrast, maturation is the process of becoming mature or developed, both mentally and physically. Thus, this is the fundamental difference between learning and maturation.

Moreover, learning is mainly a mental process, whereas maturation is both mental and physical development.

Another difference between learning and maturation is that learning happens through experience, practice, training, or education, while maturation occurs through individual growth.

While learning happens because of external stimuli, maturation does not need any external stimuli.

Classical Conditioning (Ivan. Pavlov)

Classical conditioning is a type of learning that had a major influence on the school of thought in psychology known as behaviourism. Classical conditioning is a learning process that occurs through associations between an environmental stimulus and a naturally occurring stimulus.

The most famous example of classical conditioning was conducted by Pavlov on dogs who salivated in response to a bell tone. Pavlov showed that when a bell was sounded each time the dog was fed, the dog learned to associate the sound with the presentation of the food.

John Watson proposed that the process of classical conditioning was able to explain all aspects of human psychology.

Everything from speech to emotional responses was simply patterns of stimulus and response. Watson denied completely the existence of the mind or consciousness. Watson believed that all individual differences in behaviour were due to different experiences of learning.

Pavlov's Experiment

Pavlov conducted his Experiment on a dog. He conducted this experiment in three phases.

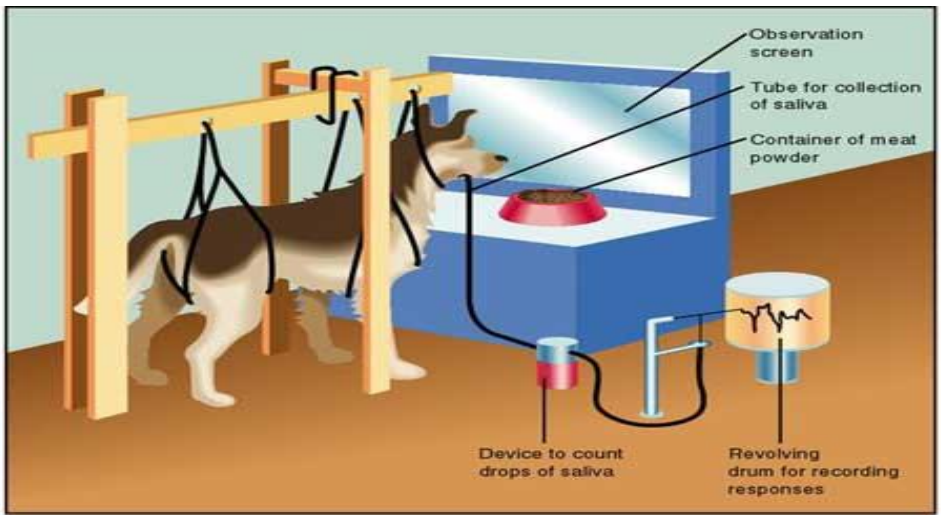
Phase 1. Before Conditioning

The dog was placed in a box and harnessed. A simple surgery was conducted and one end of the tube was inserted in the dog's jaw and the other end of the tube was put in the measuring glass.

During this phase of the processes, the unconditioned stimulus (UCS) food results in an unconditioned response (UCR) salivation.

For example, presenting food (the UCS) naturally and automatically triggers a salivation response (the UCR).

In the **before conditioning** phase, an unconditioned stimulus is paired with an unconditioned response. A neutral stimulus is then introduced.


Observation screen
Tube for collection of saliva
Container of meat powder
Device to count drops of saliva
Revolving drum for recording responses

Phase 2. During Conditioning

In the second phase the dog was kept hungry and placed in harness with one end of the tube ending the in the jaw and the other end in the glass. A bell was sounded and immediately thereafter food (meat powder) was served to the dog. For next few days every time the meat powder was presented, it was preceded by the sound of the bell.

After a number of such trials, a test trial was introduced in which everything was the same as the previous trails except that no food followed the sounding the of the bell.

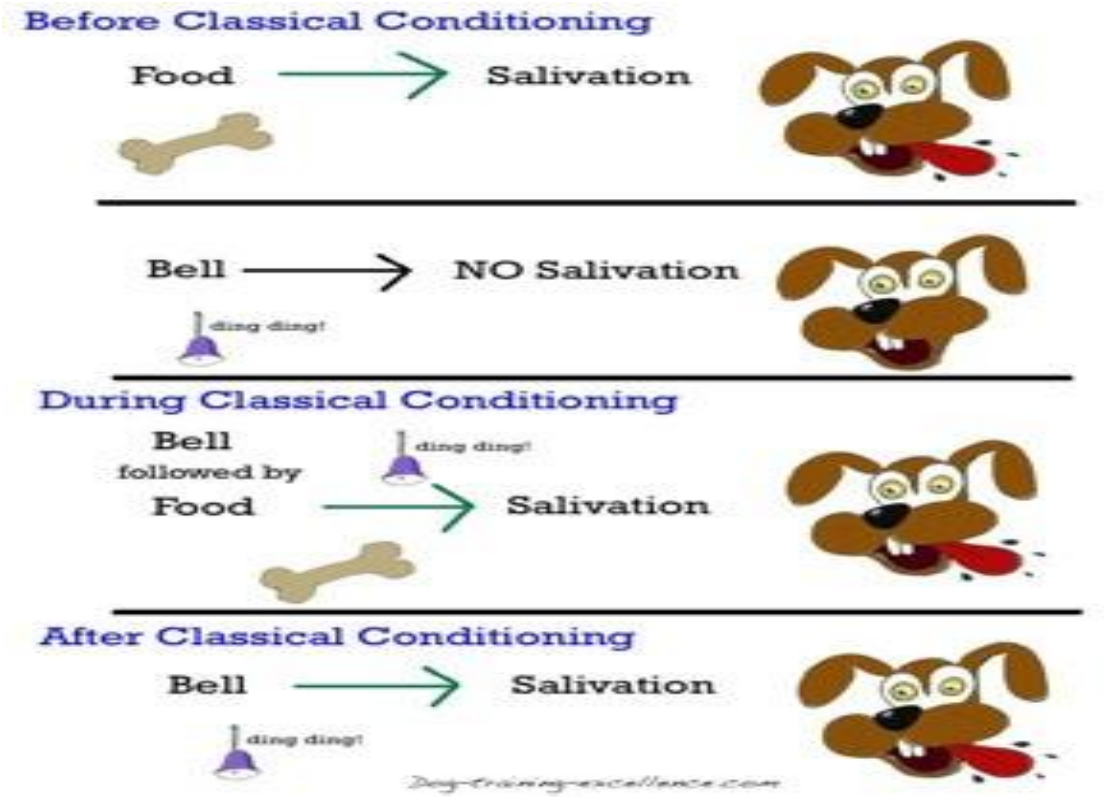
The dog still salivated to the sound of the bell. This association between bell and food resulted in acquisition of new response by the dog. this has been termed as conditioning.

The **during conditioning** phase involves pairing a neutral stimulus with an unconditioned stimulus. Eventually, the neutral stimulus becomes the conditioned stimulus.

Phase 3. After conditioning

After conditioning the food salivation started to occur in the presence of the sound of the bell. The bell becomes the conditioned stimulus (**CS**) and saliva secretion a conditioned response (**CR**). The learning situation in classical conditioning is one of **S-S learning.**

In the **after-conditioning** phase, the conditioned stimulus alone triggers the conditioned response.



Key Terms:

- Unconditioned stimulus (UCS) - automatically produces an innate, unlearned reflex response
- Unconditioned Response (UCR)-unlearned reflex behaviour when exposed to an UCS
- Neutral Stimulus (NS)-event that does not produce a response
- Conditioned Stimulus – event that produces a learned response

- Conditioned Response- a learned physical reflex behaviour.

Determinants of classical conditioning

1. **Time Relations between stimuli:** In classical conditioning the first three are called Forward Conditioning Procedures and the fourth one is called Backward conditioning.

The basic experimental arrangements of these procedures are as follows:

I. Simultaneous Conditioning: When the CS and US are presented together. It is effective to acquire CR but requires greater number of trials.
II. Delayed Conditioning: The onset of CS precedes the onset of US. The CS ends before the end of the US. It is most effective way of acquiring CR.
III. Trace Conditioning: The onset and the end of the CS precedes the onset of US with some time gap between the two. It is effective but requires greater number of trials.
IV. Backward conditioning: The US precedes the onset of CS. It is least effective way to acquire CR.

2. **Type of unconditioned stimuli:** The unconditioned stimuli used in studies of classical conditioning are of two types: Appetitive and aversive. Appetitive unconditioned stimuli elicit approach responses such as eating, drinking and caressing etc.
   These responses give satisfaction and pleasure. according to researches it is slower and requires greater number of trials. But aversive stimuli e.g. Noise, bitter taste etc. classical conditioning is established in one, two or three trials because it is painful.

3. **Intensity of conditioned stimuli:** This influences the course of both appetitive and aversive classical conditioning. More intense conditioned stimuli are more effective in accelerating the acquisition of conditioned responses, e.g.: The more intense the conditioned stimulus, the fewer are the number of acquisition trials needed for conditioning.

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